ECONOMIC INDICATORS

NEIGHBOR ISLAND PROFILES

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Hawaii County in 1986

Statistics for 1986 attest to a strong improvement in Hawaii County's economy over 1985. Gross business receipts for the first six months of the year were up 3 percent from the same period last year and tax collections through July 1986 were 16 percent ahead of 1985. Job and employment growth were also strong. The total labor force and the number of people employed also saw substantial increases of 10 percent and 9 percent, respectively. As a result, the number of jobs in the county jumped up by 8 percent over the year. Clearly, the economy was showing significant expansion in 1986.

Tourism on the Big Island showed a marked improvement over 1985. While data were unavailable on eastbound visitors, the number of westbound visitors was up by 13 percent through the first seven months of 1986. This significant increase is partially the result of the poor performance of the industry in 1985 due to the United Airlines strike; but, vigorous efforts on the part of various visitor industry groups also contributed to the upswing.

The accelerating pace of development in West Hawaii is bringing into sharper focus the growing need for further expansion of visitor handling capacity in West Hawaii. In particular, the inability of the runway at Keahole Airport to handle takeoffs of fully loaded and fueled DC-10 and 747 aircraft, and provide regular non-stop service to the mainland and foreign countries, will increasingly become a bottleneck to further development of West Hawaii's visitor industry. When the Keahole Airport was opened in 1970, there were 1,787 hotel rooms in West Hawaii for it to serve versus 1,393 rooms on the east side of the island. Since then, the hotel-room inventory on West Hawaii has grown to 5,872 units, with a further 11,707 planned, while the number of hotel units in East Hawaii actually declined to 1,323 hotel units with none planned for future development. In short, in roughly the last fifteen years, the visitor plant in West Hawaii has grown by 229 percent, and is still growing, while that of East Hawaii actually declined by 5 percent with little hope for future growth. Rational distribution of public resources would indicate a more serious consideration of the need for expanded visitor handling capacity in the areas where visitor growth, has been, and is expected to be in the future.

The original master plan for the Keahole Airport was drawn up in the late 1960s, and envisaged an airport that was to be built in two increments: the first to provide inter-island service with 6,500 foot runways; and the second to provide full intercontinental service with runways of 12,000 feet. The original designs projected a need for the second increment by 1985, depending on the level of hotel development, airline expansion plans, and other developmental factors. The time has come and gone; and with the pressures of development beginning to accumulate, the necessity for expanding the runways at the Keahole Airport is now greater than ever.

Agriculture is also expanding. Diversification and cost reduction were prevailing themes among both large companies and small firms. Progress has also been made in diversified crops, particularly ginger root and coffee.

The commercialization of projects at the Natural Energy Laboratory of Hawaii (NELH) and the County's approval of the Hawaii Ocean Science and Technology (HOST) Park at Keahole portends growth for high tech industries. In addition, the possibility of an operational commercial geothermal power plant by the year 2000 appears reassured with the recent contract between Hawaii Electric Light Co. (HELCO) and Thermal Power Co.

Accompanying the growing momentum of economic development on the Big Island has been the growing issue of infrastructure adequacy for the island. Availability of water for existing farmers as well as future hotels and residents, disposal of sewage and solid wastes, traffic congestion, and the maintenance of highways and roads are four major concerns of Big Island residents.

TOURISM

The visitor industry performed well through the beginning of 1986. The average hotel occupancy rate stood at 63 percent, a 6-percent increase over the first seven months of last year. The improvement was due to a 10-percent increase in occupancy rates in West Hawaii, particularly in the South Kohala resorts which serve the more affluent repeat visitor whose travel plans are not highly dependent on prevailing economic conditions.

The upsurge in new developments on the Kona Coast points to impending growth in Big Island tourism. The $310 million financing for the Hyatt Regency Waikoloa was closed in August and construction has begun. The resort, which is expected to open in mid-1988, will employ 1,800 persons and 1,244 rooms, and will effectively double the hotel inventory of the Kona Coast.

The Keauhou region witnessed substantial changes in

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hotel ownership in the past year. Otaka, Inc. purchased the Kona Lagoon Hotel and the Keauhou-Kona Golf Course earlier this year, and has since sold the Kona Lagoon to Azabu U.S.A. Otaka, Inc.'s interest in the Keauhou region subsequently expanded with its purchase of the Kona Surf Resort and Keauhou Beach Hotel.

Hotels on East Hawaii were little better than half full on average through July 1986, with occupancy rates 9 percent lower than last year. However, the Hilo Main Street Program has attained moderate success in its rehabilitation of Downtown Hilo, and a market plan promoting East Hawaii as a visitor destination is being developed by the Hilo Hawaii Visitors Industry Association. Moreover, with the new ownership of the Naniloa Hotel, marketing and advertising efforts, which had been suspended this past year, will be resumed.

SUGAR

Despite a 4-percent decline in sugar production, the sugar industry is doing relatively well. The decrease in total yields was caused by a planned withdrawal of sugar acreage. In fact, recent sugar statistics indicate that sugar yields-per-acre for the island of Hawaii increased from 10.9 tons per acre in the first half of 1985 to 11.4 tons per acre in the same period in 1986, an increase of 4.6 percent.

Reduction of operating costs appears to be an important goal for all sugar companies on Hawaii. Hamakua Sugar is closing its Ookala mill and expanding operations at the Haina mill in order to reduce costs, while Hilo Coast Processing Co. has changed its work shift schedules to better accommodate lower production levels.

Another trend is the diversification of sugar lands in Hawaii. Hamakua Sugar has expanded into the feedlot business, with an initial 1,600 head of cattle, as well as gone into the production of processed sugar cane syrups used for pancakes and waffles. Mauna Kea Sugar has also diversified its operations into macadamia nuts, while Amfac has made a commitment to diversify some of its sugar lands to the growing of cocoa beans.

DIVERSIFIED AGRICULTURE

Next to the visitor industry, diversified crops are fast becoming the most important contributor to the economic base of Hawaii County. Among the leaders, macadamia nuts is already replacing sugar as the number one crop in Hawaii. In 1985, the value of macadamia nuts harvested was $30 million. C. Brewer's Mauna Loa Macadamia Nut Processing Company, which owns half of all bearing nut trees on the island, expects the macadamia nut crop to be up by 10 percent over last year because of the unusual weather conditions in the first half of 1986.

Coffee is doing well this year. A bumper crop is expected as a result of favorable weather this past winter, the improvement in the care of the coffee trees, and an increase in the number of plantings in the 1983-84 season. The 1986-87 season is expected to yield 25,000 bags of green coffee, a two-thirds increase over the 1985-86 crop of 15,000 bags. Some growers are going into large scale mechanized production. The three-year agreement between Superior Coffee and two Kona coffee cooperatives indicates an optimistic future for Kona coffee.

The 1985-86 season is predicted to be explosive for ginger root with an expected harvest of 10 to 12 million pounds. In anticipation of this, the Ginger Growers Association is marketing their product worldwide as a commodity of exceptional quality, and is continuing its efforts to increase productivity.

Anthuriums achieved steady success through the first half of 1986. As of June 1986, shipments of anthuriums were up 20 percent over the same period last year. The weak dollar benefitted anthurium farmers by making their product cheaper in foreign markets. As a result, sales to Japan increased by 50 percent over the first half of the year.

Papaya production continues its healthy pace. Despite the 5-percent decline in acres harvested, fresh production of papayas on the Big Island, which are of the solo (yellow) variety, remained roughly stable at 26,518 thousand pounds. Higher papaya output is anticipated next season as a result of an 80-percent increase in plantings in the first half of 1986.

Guava growers on Hawaii produced only 3,050 thousand pounds of fruit in 1985, a decline of 16 percent from the previous year's output. However, guava growers appear to be on the verge of substantial gains. With all of Kauai's guavas committed to Ocean Spray for its guava fruit drink, a gap in the local guava market has arisen which the Hawaii guava farmers hope to fill. Moreover, Japanese juice companies are increasing their demand for Hawaii's pink guava puree due to the greater appeal of Hawaii's guava, which has a more pleasing color, texture and flavor than other Asian varieties. Another product, which is becoming increasingly popular and expanding the demand for guava puree, is the dessert item, sorbet.

Production of bananas through the first seven months of 1986 fell by 3 percent due to the storm that hit the island in the beginning of the year. However, recovery from the effects of the storm is expected within the next few months. Banana acreage is expected to expand from 200 to 400 acres, and production levels are projected to approach 9 million pounds of bananas a year.

HIGH TECHNOLOGY INDUSTRIES

The growing importance of high tech industries to Hawaii County's future economic development is attested to by the increasing commercialization of experimental projects developed at the Natural Energy Laboratory of Hawaii (NELH) and County approval for the development of the Hawaii Ocean Science Technology (HOST) Park. Cyanotech has had success in producing micro-algae for health foods, pharmaceutical dyes, and biofertilizers. The company produces spirulina, the algae used in health foods, and dunaliella, an algae used for its betacarotene content. In addition, the extraction of phycobiliproteins, a pigment used by pharmaceutical companies, is also taking place. Production of algae to be used for biofertilizer is expected to begin in 6 months in Kau.

Hawaiian Abalone Farms currently sells its abalone to surrounding resorts and restaurants, but hopes to supply the sushi markets in Honolulu and Japan. Hence, the company is expanding its operations within the NELH compound and into the HOST park nearby. Occupying 20 acres and employing 50 persons, the first phase is expected to be completed in 1988, and will produce 2 million abalone per year.

Research on closed-cycle ocean thermal energy conversion (OTEC) at NELH is winding down, but substantial progress has been achieved on the open-cycle OTEC process which utilizes a more efficient technology, carries less risk of environmental pollution, and produces more power per gallon of water pumped. The decline in federal funds due to the Gramm-Rudman Act, however, has resulted in a

slowdown of the project. An additional $1 million per year for 8 years has been granted for OTEC research by Japan under the Pacific International Center for High Technology Research (PICHTR) group.

Other projects underway at NELH is nori production, maintenance of lobster ponds, and the possible commercial production of different varieties of clams and opihi.

Neighboring the NELH compound is the HOST Park, which could generate as many as 2,000 jobs for Big Island residents. The Park recently received final approval from the County Council for its rezoning status, and groundbreaking for the project is set for mid-November.

Construction of telescopes and support facilities are underway at Mauna Kea. The James-Clerk Maxwell telescope, previously known as the United Kingdom-Netherlands (UKN) telescope, the Cal-Tech 10-meter telescope, and the Keck Observatory, which will have a 10-meter optical telescope, are presently under construction.

Construction of support facilities for the Mauna Kea Observatory is also underway. In Hilo, the second phase of the United Kingdom telescopes' base headquarters was dedicated this August. Elsewhere, expansion of the Canada-France-Hawaii Telescope Corporation Base Support Facility Phase II is under construction in Waimea. Moreover, a permanent camp which will add 20 rooms and some office space at Hale Pohaku broke ground in August.

RENEWABLE ENERGY

Alternate energy sources provide a considerable amount of energy on Hawaii Island. In 1986, 49 percent of all electricity produced is expected to come from these renewable energy sources. Electrical production from the sugar companies using combinations of bagasse, coal, and oil, is by far the most important source, providing an estimated 42 percent of all electricity produced.

However, geothermal power remains the source with the greatest potential. Presently, the development of geothermal power is a major issue on the Big Island. Rule 12, a county ordinance intended to set guidelines for geothermal development, remains a debated topic. Meanwhile, the Hawaii Geothermal Project-Abbott (HGP-A) plant, which has been consistently providing 3 megawatts of power, is now operating in the black. The plant is currently involved in the installation of a heat exchanger, which will be used for geothermal by-product projects—glass making, cloth dyeing, wood drying, plant germination, and processing of green papayas to powdered form.

Thermal Power Co.'s contract with HELCO to provide 25 megawatts of power by 1993 represents a commitment by the private sector to geothermal development. A third well that was recently completed has been determined to be commercially viable, but at least six more wells will be needed to provide the 25 megawatts of power. True/MidPacific Geothermal is working with Campbell Estate in developing another geothermal plant on the Big Island.

An adequate drop-off point off Kawaihae Harbor for an underwater cable that can transmit electricity from Hawaii to the other islands has been discovered. If successful, the high-voltage undersea cable system will transmit up to 500 megawatts of geothermal power from the Big Island to Maui and Oahu.

Hydropower plants continue to provide a small share of all electricity produced. Earlier this year, floods temporarily damaged two hydroplants, resulting in a downward revision in expected electricity from hydropower in 1986 by HELCO. Approval of a 5-megawatt plant on Hookelekele Stream, about 8 miles west of Hilo Bay, is currently being sought by Garratt-Callahan Co.

The prospects for expansion of wind energy as an alternate energy source on the Island of Hawaii appear dim. Windmills on Kahua Ranch continue to provide a small percentage of electricity produced, but additional farms proposed last year have not been developed as planned. Kamaoa Wind Energy, which was to have developed a major wind energy farm on the Big Island, is experiencing difficulty in meeting its commitment to provide 10 megawatts of power to HELCO. In addition, American Diversified Capital Corp.'s ambitious plan to put a 20-megawatt wind farm on 400 acres in South Point has been put on hold. The 120 windmills above the Mauna Kea Hotel are primarily used to pump water from three wells in the area.

CONSTRUCTION

The construction industry appears to have reversed its 4-year downward slide. The number of employed construction workers began to increase in 1985 after declining since 1980. The average number of contract construction workers rose to 1,270 persons in July of 1986 compared to 1,245 persons in the first seven months of 1985.

The improvement is also reflected in construction trends. The value of construction put in place rose by 20 percent to $48 million during the first 6 months of this year, after remaining static in 1985. The most dramatic increase was in the value of non-residential permits, which increased by more than 450 percent, primarily as a result of the new Hyatt Regency Waikoloa.

GOVERNMENT

Hawaii county faces many issues associated with the rapid development of the island. Water availability, sewage and refuse disposal, traffic congestion, and highway maintenance and expansion are among the top priority items confronting the county.

Lack of an adequate supply of water on the Big Island has become a glaring problem. The droughts that occurred in 1981, 1983 and 1984 led to the issuance of water conservation notices from the county, and farmers, whose crops rely heavily on irrigation, suffered declines in output. Moreover, the problem of inadequate water supply has slowed housing development, because many developers cannot obtain the water commitments necessary for development approval. A developer can opt to dig private wells. However, because it costs an average $1 million to drill and develop a well, this option can be quite costly.

A problem with the disposal of sewage and solid wastes has also appeared. The Kona Sewage Treatment Plant is presently up to capacity, and additional development in the Kona region will require additional sewage plant systems. The County is presently expending $20 million over the next 6 years for a sewer system in Hilo and Kona. A new sewage plant in Kona is expected to be on line by 1990. Moreover, maintenance of existing plants poses problems as well due to the age of the plants. Privatization of some of the smaller plants is being considered.

The County is also concentrating on the improvement of landfill operations to make more efficient use of existing land. There are 22 transfer stations where people can take their wastes, which are then compacted and later taken to a landfill area.

Maintenance and expansion of highways and country roads is another problem faced by Hawaii. For example,

traffic congestion in Waimea and parking and congestion problems in Kailua-Kona, as well as problems of inadequate drainage along many highways and streets point to increased bottlenecks for future development.

The Hawaii County General Plan, which looks at development policy from a 20-year perspective, was released in May. The Plan will face an ordinance review, where it will receive additional input and analyses from developers and planners. Over 40 proposals for changes in the Plan, including more than a dozen map changes, have been received by the Hawaii County Planning Department.

The Hilo Air Cargo Distribution Center project which hopes to establish Hilo Airport as the hub of a direct West Coast-Hilo air-cargo system achieved some success in the past year. A feasibility study analyzing the proposal was completed, and experimental direct all-cargo flights were conducted by Emery Worldwide Cargo in August.

The presence of the military is becoming increasingly evident. Recent expansion and construction at the Pohakuloa Training Camp has spurred the economy somewhat through advances in construction, retail trade, and agriculture.

SUMMARY

The economy of Hawaii Island in 1986 appears to be well on its way to sustained growth. Many industries are experimenting with new technologies and products to improve productivity and efficiency of operations. Diversification and cost containment in sugar and diversified agriculture have taken place. Further developments at the Natural Energy Laboratory of Hawaii, the Hawaii Ocean Science Technology Park, and the Mauna Kea Observatory suggest an increasing contribution of high tech industries to the island's economic base, and renewable energy projects continue to grow.

Expectations of impending economic growth, however, have led to increasing concern over the capacity of the existing infrastructural system. Reassuringly, residents and the county government have begun to address the need for an ample water supply, sufficient sewer and refuse-disposal systems, and adequate highways. Along with the issue of the runway extension at Keahole Airport, as these questions are addressed, Hawaii County will be moving closer toward the goal of laying a stable foundation for sustained and productive growth in the years ahead.

Hawaii County Statistics

	Unit	Period	1981	1982	1983	1984	1985	Jan.-July 1986	% change Jan.-July 1986/1985	% change Annual 1985/1984
Population, Resident	number	July 1	97,012	100,130	102,880	107,169	109,159	n.a.	n.a.	1.9
Per Capita Personal Income	dollars	dollars	8,838	9,118	9,501	9,998	n.a.	n.a.	n.a.	n.a.
Civilian Labor Force	number	mo. avg.	44,250	45,450	46,600	46,850	48,000	52,307	9.9	2.5
Employment	number	mo. avg.	40,850	41,050	42,350	43,100	44,100	47,743	9.2	2.3
Unemployment	number	mo. avg.	3,400	4,450	4,300	3,750	3,950	4,571	18.1	5.3
Unemployment Rate	percent	mo. avg.	7.6	9.8	9.2	8.0	8.2	8.7	7.4	2.5
Total Job Count[1]	number	mo. avg.	38,000	37,800	38,600	39,400	40,050	42,650	7.8	1.6
Gross Business Receipts	mil. $	total	1,179.4	1,246.2	1,380.9	1,569.8	1,594.5	843.5*	3.3*	1.6
State Tax Collections[2]	thous. $	total	59,698	52,484	65,787	73,867	79,288	53,942	16.2	7.3
Visitor Expenditures	mil. $	total	179.2	200.9	277.2	248.9	285.9	n.a.	n.a.	14.9
Estimated Westbound Visitors	thous.	total	672.7	678.2	714.0	760.9	697.4	470.5	13.3	−8.4
Hotel Inventory (February)	number	February	6,705	7,167	7,469	7,149	7,511	7,280[3]	−3.1[3]	5.1
Hotel Occupancy	percent	mo. avg.	44.9	44.2	46.3	55.6	57.6	62.6	6.1	3.6
Construction Put in Place	thous. $	total	102,146	78,707	78,112	80,465	81,102	48,439*	20.2*	0.8
Private Permits	thous. $	total	136,455	75,209	88,015	90,347	121,439	189,957**	116.5**	34.4
Residential Permits	thous. $	total	73,708	61,056	56,852	64,370	83,554	44,470**	−27.7**	29.8
Non-Residential Permits	thous. $	total	62,747	14,153	31,163	25,977	37,885	145,487**	453.7**	45.8
Public Contracts Awarded	thous. $	total	48,364	22,919	20,153	23,057	18,520	18,716	84.8	−19.7
Real Estate Resales										
Single Family	number	total	425	281	378	325	416	275	34.1	28.0
Average Price	dollars	cum. avg.	93,272	96,249	91,796	89,036	93,775	100,521	2.2	5.3
Condominium	number	total	93	58	127	95	93	78	36.8	−2.1
Average Price	dollars	cum. avg.	107,730	123,200	95,535	91,019	97,718	90,474	−6.2	7.4
Sugar Production, raw sugar 96°	thous. tons	total	384	369	392	391	319	163	−4.1	−18.4
Diversified Crops and Livestock	thous. $	total	86,930	89,121	91,824	91,215	101,277	n.a.	n.a.	11.0
Diversified Crops[4]	thous. $	total	63,912	65,344	67,951	67,982	79,155	n.a.	n.a.	16.4
Livestock	thous. $	total	23,018	23,777	23,873	23,233	22,122	n.a.	n.a.	−4.8

[1] Refers to number of jobs rather than number of persons employed. Persons with more than one job are counted more than once.
[2] Totals do not include real property taxes.
[3] Compares February, 1986 to February, 1985.
[4] Total crops excluding sugar.
n.a. = not available
*Period is Jan.-June.
**Period is Jan.-August.

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KAUAI COUNTY IN 1986

The economy of Kauai County emerged from last year's United Airlines strike and this year's barge strike virtually unscathed. Gross business receipts, the broadest measure of economic activity, rose by 28 percent to $572 million between January and September of 1986, compared to the same period a year ago. Tax collections increased by 35 percent during the same period.

Contributing to these strong statistics is the spectacular growth of Kauai's tourism. Through October, 856,230 westbound tourists visited Kauai, up 22 percent from the same period in 1985. If this trend continues, close to 1 million westbound tourists are projected to visit Kauai this year. This will set a new record, displacing the previous 1978 record of 837,712 westbound visitors.

Riding on the strength of tourism, retail trade is putting on an impressive performance. Retail sales through August amounted to $173 million, up 21 percent from the same period a year ago. Major retail outlets such as the Coconut Plantation Market Place and the Kukui Grove Center reported double-digit increases in their gross sales. Business looks so promising that the Princeville Development Company is seeking permits to expand its shopping center by 77,000 square feet for office and retail space.

The strength of tourism also spills over into construction. The value of completed construction rose 39 percent to $25 million during the first eight months of this year. The outlook for the remainder of the year and 1987 looks even better. At an estimated cost of $190 million, the renovation and expansion of the Westin Kauai is the most ambitious project in the history of construction on Kauai. Elsewhere, zoning was approved for a 560-room hotel-condominium complex at Keoniloa Beach in Poipu. Ventura Development Corp., the developer, hopes to secure financing so construction can start next year. The Sheraton-Kauai Hotel at Poipu is also proceeding with its proposed 120-room expansion, subject to design changes from the hotel's original plan.

Some $11 million in construction projects are scheduled for fiscal 1987 at the Pacific Missile Range Facility at Barking Sands (PMRF). If all projects are approved as proposed, there will be a total of $61 million in construction at PMRF in the next three years. Most of these projects will be open to bidding by local contractors and businesses.

The sugar industry continues its struggle for survival. Despite cost-cutting measures, with sugar prices averaging only $325 a ton, most sugar companies will lose money this year. The picture is brighter with diversified agriculture, which last year managed a 2-percent increase in the value of production to $11.4 million. Most of the gain was attributable to diversified crop sales.

TOURISM

Kauai continues to lead the state in tourism growth with a 22-percent cumulative increase in westbound visitor counts through October. Hotel occupancy rates confirm this upward trend in visitor arrivals. Despite a 5-percent increase in hotel inventory, Kauai's cumulative occupancy rate rose 20 percent to 79 percent through September.

The recent surge in Kauai's tourism was not entirely accidental. While a weak dollar, terrorism abroad, and cheaper oil prices have helped Hawaii's tourism in general, Kauai's record performance must also be credited to vigorous promotional activities by County officials and various industry groups on Kauai.

The Kauai Hilton and Beach Villas staged its grand opening this past April. It is the latest entry in the rapidly rising upscale resort market on Kauai.

The Sheraton Princeville Hotel is the only resort hotel located in Princeville, in northern Kauai. Barely one year old, this 300-room resort is already exceeding all expectations, with occupancy rates expected to hover around 80 percent this year.

Poipu, located on Kauai's southern coast, has evolved into a full destination resort area in its own right. There are more than 2,000 hotel rooms and condominium units in the area. According to the latest data available (1985), the Poipu occupancy rate averaged 70 percent. This was a substantial improvement over the 44 percent rate experienced in 1982, the year of Hurricane Iwa. Poipu's current performance indicates full recovery from the disastrous hurricane, and all 1986 indications point to a banner year.

SUGAR

Sugar remains the leading agricultural activity on Kauai. In 1985, Kauai produced 242,000 tons of raw sugar, up 12 percent from the previous year. However, due to falling sugar prices, the processed value of raw sugar increased only slightly to $79 million in 1985, from $78 million in the previous year. Industry performance in 1986 is expected to exceed 1985, although heavy rains during

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the summer and fall of 1986 will cause some harvests to be postponed to 1987.

Lihue Plantation expects to harvest 79,500 tons of sugar this year. Due to rainy weather, the cost of production at the Lihue Plantation rose to $347 from $340 per ton a year ago. With sugar prices for Hawaii plantations averaging only $325 per ton, Lihue plantation is expected to lose $1 million this year. As a result, efforts are being made to reduce the costs of production through experimentation with one-year crop harvesting to save cultivating costs and to get higher yields.

McBryde Sugar Co. is expecting to harvest 58,000 tons this year, up from 57,000 tons in 1985. Due to rainy weather, 2,000 tons were carried over from this year so that next year's crop is expected to increase to 59,400 tons. Despite increased production, McBryde is looking for ways to diversify its sugarcane land. The company is planning to double its acreage of macadamia nuts to 600 acres in two years. In addition, the company is experimenting with tropical crops such as tea, coffee, and patchouli, an oil-yielding plant.

Kekaha Sugar Co. is expected to produce 54,000 tons of sugar this year with an average of 13.6 tons per acre (TSA). Faced with an average sugar price of $325 per ton, the company is expecting a slight loss, or, at best, to break even. In an effort to contain costs, the company plans to reduce its work force by the end of the year. The company has no plans to diversify since it leases most of its sugarcane land. The leases expire in 1993.

Olokele Sugar expects to harvest 33,000 tons with an average TSA of 14.2. Besides employing new sugarcane varieties, other factors such as better scheduling, a drip irrigation system, and good weather have contributed to higher sugar yields.

DIVERSIFIED AGRICULTURE

In 1985, the farm value of diversified agriculture totalled $11.4 million, a 2-percent increase from the previous year. Most of the increase was due to diversified crop sales, which increased 6 percent.

Of diversified crops, the 1985 farm value of flowers and nursery products showed the biggest increase. Production value was up 50 percent to $1.2 million. Prospects for 1986 are optimistic. This sector has great potential because of the demand being created by the new hotels. They use a lot of flowers and potted plants in their operations. Due to lack of supply, flowers have to be imported from other islands. When the Westin Kauai opens next year, demand will be even greater. Production on Kauai that can fulfill demand will not only increase farm value, but provide work in stringing leis and preparing flowers and plants for the hotels.

The farm value of fruit harvested last year declined 11 percent to $1.7 million, mainly due to a decline in papaya production. Overproduction in 1984 resulted in a collapse in farm prices. One result was that growers didn't have sufficient capital to replant fallowed fields for future harvests.

The guava industry on Kauai made up for the slack in papaya sales. With national distribution of its guava drink increasing rapidly, C. Brewer's Kilauea Agronomics is doubling its guava harvest this year to 9.5 million pounds, worth nearly $1 million in terms of value of production. Next year's harvest is projected to be 11.2 million pounds. Anticipating higher demand, the company is adding an additional 150 acres to its existing 330-acre orchard. To insure against drought, the company embarked on an extensive irrigation project, including the installation of mini-sprinklers. The company is looking forward to 25 million pounds of production annually by 1995.

Three major seed companies on Kauai have been conducting seed-corn research for some years. All three have sought more land to expand their research, but have not found all the land they need.

One company, Pioneer Hi-Bred International in Kekaha is experiencing a 5- to 8-percent increase in its research budget this year. Part of the budget is used to lease additional land. As a result, total acreage for seed corn, soybean, and sunflower research rose by 2 percent to 142 acres this year. Pioneer's research is facilitated by Kauai's climate which allows up to 2.5 seed growing cycles in a year, making the local operation a valuable contributor to the mainland-based company. According to the latest available information (1985), the value of seed corn produced in the state came to $5.1 million. Prospects for 1986 are good due to increased acreage and good weather.

Kauai is a major producer of bananas. According to the Hawaii Agricultural Statistics Service, Kauai produced approximately 2 million pounds of bananas in 1985, with a value of $527,000. This represented 24 percent of the state's banana production. Because of a 15-percent increase in banana acreage, growers are expecting a larger crop in 1986. Unlike papayas and guavas which are grown primarily for export, bananas are grown mainly for local consumption. Kauai produced sufficient bananas for its own consumption with the surplus exported to the Honolulu market. To increase its share in the Honolulu market, a new hybrid Brazilian "apple" variety of bananas has been planted recently by Kauai banana farmers.

According to the latest information available (1985), the value of Kauai-raised hogs amounted to $758,000, up 13 percent from the previous year. This represented 9 percent of the state's total hog production. The Kauai Veterinary Clinic, which started a piggery in Puhi in 1984, is one of the more efficient hog farms in the state. In addition to automation, modern cross-breeding methods result in increased production and leaner pork. Litter production averages 18 pigs per sow per year, compared with the state average of 13 pigs per sow per year. Also, growth to marketing weight is 20 percent faster. Since the State imports a majority of its pork, Kauai could gain a larger share of the local pork market by using these modern production techniques.

THE MILITARY

Kauai hosts to the Navy's Pacific Missile Range Facility (PMRF) at Barking Sands, the only major naval facility in the state outside of Oahu. In addition to weapons testing and research, the facility supports anti-submarine-warfare training, as well as air-to-air and surface-to-air missile target practice.

PMRF is also well known for its tracking capabilities through the use of sophisticated computers. The facility has the world's largest instrumented undersea range covering over 1,000 square miles of ocean bottom. Work is underway on a new 15,000 square-mile range extending between the north of Kauai to the north of Oahu.

To support these activities, PMRF is embarking on a $100 million modernization program, including the installation of a brand new computer facility. Other projects include the construction of a new hangar, a new taxi runway, and a small-boat harbor on base.

The Pacific Missile Range Facility is important to Kauai's economy. With a budget in excess of $37 million for fiscal year 1987, military spending on Kauai is only exceeded by the tourism and sugar industries. Several contractors are competing for a five-year contract to operate and maintain the facility. The winning contractor will hire a substantial number of new workers at the base, most of whom will be locally hired. Local contractors are also in line to compete for $11 million in construction projects scheduled for this fiscal year.

RETAILING

Retail trade is doing exceptionally well, up 22 percent through July. Most of the increase in retail business can be attributed to the growth in tourist arrivals. Coconut Plantation Market Place, is enjoying record sales so far this year. Gross sales during the first seven months were up 17 percent over the same period in 1985. Part of the increase is the result of the management's efforts to lure cruise ship passengers via its free shuttle service. They constitute about 30 percent of total sales at the Market Place. However, next January, business will suffer when American Hawaii Cruise's SS Constitution discontinues its overnight docking at Nawiliwili.

Kiahuna Shopping Village in Poipu recently had its grand opening. The Village has more than 33,000 square feet of retail space, 87 percent of which is now occupied. Two additional leases are being negotiated. If the parties reach agreement, the center will be 94 percent leased. This $5 million complex, aimed at the upscale visitor market, is experiencing a steady monthly increase in sales.

Kukui Grove Center, the largest shopping center on Kauai, finished 1985 with record sales of $48 million. Sales for the first nine months of 1986 were up by 12 percent over the same period in 1985. Tourist expenditures currently account for 20 percent of sales. In an effort to raise this percentage to the management's desired 30-percent level, free shuttle buses are being provided to cruise-ship passengers every week.

CONSTRUCTION

Construction activity on Kauai showed mixed results. While the value of private permits authorized increased by 21 percent in 1985, the value of public contracts awarded declined by 60 percent over the same period. The trend continues this year with the value of private permits authorized rising by 59 percent through September, while the value of public contracts awarded fell by 6 percent through October. In general, however, construction appears to be healthy. Construction-put-in-place rose 13 percent in 1985 and 39 percent during the first eight months of this year.

Of the private permits authorized in 1986, the value of residential permits declined by 16 percent through September to $31 million. By contrast, the value of nonresidential permits showed a substantial increase of 300 percent over the same period. This was primarily due to the Hemmeter Westin Kauai project, which is scheduled to open in the fall of 1987 as a world-class resort. Along with the renovation of the old Kauai Surf's 553 rooms, this $190-million project will add some 290 rooms with the building of a second 10-story tower. Hemmeter is also seeking permits to build another 750-room hotel between the Westin Kauai and the Ninini Point lighthouse. Shoreline management permits will be needed for this $180 million, 750-room hotel which the developer hopes to open in early 1990.

ALTERNATE ENERGY

There are three major sources of electric power on Kauai. Fossil fuel, the traditional source, provides more than 60 percent of the total power generated. About 25 percent is generated by burning bagasse, a sugarcane residual. Most sugar companies sell only their surplus power. But, Lihue Plantation is committed to provide Kauai Electric Co. with 12 megawatts of power for 48 weeks each year.

Hydroelectric power provides 15 percent of Kauai's electrical needs. While lower oil prices render this alternate source of power less attractive at the present time, five hydroelectric power projects are, nevertheless, in various stages of development. Island Power's Wailua Falls is the most active project, having received its preliminary permit from the Department of Land and Natural Resources. The project is halted at the present time since a series of new requirements, such as certain water quality standards, have been imposed.

Alexander & Baldwin Inc. received an extension on its permit to construct a hydroelectric plant at Wainiha. All was set to go, but the project was postponed at the last minute pending a more favorable financial environment. Likewise, Kekaha Sugar Co.'s Kitano Hydro project was suspended due to lack of funding. Meanwhile, an environmental impact study is being done for Hanalei Power Co.'s Hanalei Hydro-plant. Finally, the proposed Lumahai Hydro-plant is the least developed project for which no studies have yet been completed.

Kauai Electric Co. had projected no increase in power demand for 1986, due to the closing of the Kauai Surf Hotel at the beginning of the year. But, the growth in tourism increased demand by more than 8 percent in the first eight months of 1986, especially from condo properties that cater to visitors.

Sugar plantations have maintained consistent power supplies to the Kauai Electric system, but demand has been increasing. This has put a strain on the utility's oil-fired generating plants. If alternate energy generation does not increase, Kauai Electric will be forced to build a six or seven megawatt oil-fired plant by 1989.

NEW KAUAI PRODUCTS

In 1985, Kauai products generated an estimated $9.5 million in sales and provided employment for approximately 250 people. According to the Kauai Product Council, half of the value of a product must originate on Kauai to qualify as a Kauai product. There is a diversity of Kauai products, among them: Kauai soap, artwork, travel movies and magazines, goodies such as Kauai Kookies, taro chips, dried fruits, ice cream, sausage, and papaya seed and passion fruit salad dressing.

Marketing is the biggest challenge facing Kauai products. To increase public awareness, the second Kauai Products Show was held at the Kauai War Memorial Convention Hall in October. More than fifty merchants participated in the show, which was a joint effort by the Kauai Chamber of Commerce, the Kauai Economic Development Board and the County Office of Economic Development. To insure continued interest in locally made products, the Kauai Products Council recently appropriated funds for a portable Kauai Products Booth, called "Ota Sweet Shop."

The booth is to be shown at special events and activities on the island. The booth is now on display at the Kukui Grove Center. The Council plans to have a similar booth at Lihue Airport's new terminal.

INFRASTRUCTURE

Being the county with the fastest growing visitor industry this year is boosting Kauai's economy. But that success has also brought certain problems. Infrastructural systems on the island are beginning to be taxed to capacity, and residents are beginning to complain. Being very capital intensive, highway, sewage, and water-system improvements cannot be built overnight. The county is currently working with the State Department of Transportation on projects that would alleviate the increasingly crowded State highway traffic situation. While the state is examining traffic loads, the county is evaluating short-term solutions, such as staggered work hours for county employees, no parking on busy streets, and left turn lanes, so traffic will not be held up at intersections. The county is keeping up with water and sewage-treatment requirements, but long-range planning is a constant need.

CONCLUSION

Major indicators reveal an excellent year for Kauai County in 1986. Gross business receipts through September amounted to $572 million, up 28 percent from the same period in 1985. Construction-put-in-place rose 39 percent to $25 million over the same period. Generating these rosy statistics is the spectacular growth in Kauai's tourism which saw a 22-percent increase in the number of westbound visitors during the first ten months of this year. As a result of these improvements, the monthly average of total job counts rose 3 percent to 19,950 jobs during the first seven months of this year.

Given these encouraging statistics, 1986 will be a record growth year for the Kauai economy. With continuing strong growth in tourism next year, 1987 should also be a year of strong expansion for the Garden Island.

Kauai County Statistics

	Unit	Period	1981	1982	1983	1984	1985	Jan.-Sep. 1986	% change Jan.-Sep. 1986/1985	% change Annual 1985/1984
Population, Resident	number	July 1	40,648	41,905	43,059	44,167	44,781	n.a.	n.a.	1.4
Per Capita Personal Income	dollars	total	9,423	10,113	10,597	11,328	n.a.	n.a.	n.a.	n.a.
Civilian Labor Force	number	mo. avg.	20,100	20,850	21,650	21,300	21,800	22,789	3.6	2.3
Employment	number	mo. avg.	18,900	19,150	20,000	19,800	20,300	21,222	2.8	2.5
Unemployment	number	mo. avg.	1,150	1,700	1,650	1,500	1,500	1,567	14.2	0.0
Unemployment Rate	percent	mo. avg.	5.8	8.2	7.7	7.0	6.8	6.9	11.3	−2.9
Total Job Count[1]	number	mo. avg.	18,300	18,300	18,900	18,950	19,400	20,050	6.6	2.4
Gross Business Receipts	mil. $	total	462.9	467.6	536.3	548.1	599.0	572.3	27.8	9.3
State Tax Collections[2]	thous. $	total	26,523	22,166	22,482	28,261	33,793	33,388	35.4	19.6
Visitor Expenditures	mil. $	total	197.3	210.6	250.8	359.4	407.9	n.a.	n.a.	13.5
Estimated Westbound Visitors	thous.	total	757.8	733.3	692.1	814.6	835.6	768.3	21.3	2.6
Hotel Inventory	number	Feb.	4,738	5,147	4,193	5,313	5,656	5,922	4.7[3]	6.5
Hotel Occupancy	percent	mo. avg.	62.7	57.2	57.2	63.0	64.8	79.7	18.6	2.9
Construction Put In Place	thous. $	total	27,984	28,965	45,265	26,753	30,219	28,002	32.0	13.0
Private Permits	thous. $	total	67,313	44,239	137,853	52,735	63,888	83,332[4]	51.9	21.1
Residential Permits	thous. $	total	41,370	28,028	71,017	39,065	47,050	34,854[4]	−15.5	20.4
Non-Residential Permits	thous. $	total	25,943	16,211	66,836	13,670	16,838	48,478[4]	255.1	23.2
Public Contracts Awarded	thous. $	total	18,082	25,061	7,882	38,058	15,346	12,775[4]	−6.0	−59.7
Real Estate Resales										
Single-Family	number	total	45	39	55	71	90	119[4]	65.3	26.8
Average Price	dollars	cum. avg.	168,294	112,518	124,539	132,857	146,375	139,703[4]	−2.2	10.2
Condominium	number	total	12	27	28	42	78	132[4]	109.5	85.7
Average Price	dollars	cum. avg.	144,000	162,380	141,964	138,848	115,987	98,140[4]	−16.5	−16.5
Sugar Production, raw sugar 96°	thous. tons	total	236	217	204	217	242	205[4]	−6.0	11.5
Diversified Crops and Livestock	thous. $	total	10,968	9,478	9,359	11,154	11,368	n.a.	n.a.	1.9
Diversified Crops[5]	thous. $	total	5,724	4,754	4,248	5,951	6,299	n.a.	n.a.	5.8
Livestock	thous. $	total	5,244	4,724	5,111	5,203	5,069	n.a.	n.a.	−2.6

[1]Refers to number of jobs rather than number of persons employed. Persons with more than one job are counted more than once.
[2]Totals do not include property taxes.
[3]Compares February, 1986 to February, 1985.
[5]Total crops excluding sugar.
n.a. = not available.
[4]Figure reported is for Jan.-Oct.

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ECONOMIC INDICATORS

NEIGHBOR ISLAND PROFILES

MAUI COUNTY IN 1987

Led by record-setting growth in the visitor industry, the Maui County economy experienced strong expansion in 1986, posting a 9-percent increase in gross business receipts over 1985. Tax collections exceeded $100 million for the first time at $101 million, 22 percent higher than 1985, while the overall job count on Maui increased by 3 percent and the unemployment rate dipped to five percent.

"Led by record-setting growth in the visitor industry, the Maui County economy experienced strong expansion in 1986."

Although the pace slowed during 1987, Maui's economy continued to grow through the first quarter of the year. Gross business receipts were up by 3 percent over the same period last year. Tax collections through May were up 17 percent, and the unemployment rate dropped to 4.5 percent.

"Maui is in for another year of positive growth."

These figures indicate that Maui is in for another year of positive growth. The continuing expansion does point to some potential problem areas. The most obvious is the mounting inadequacy of the island infrastructural system. Roads, especially in West Maui, are crowded. To date it has not affected tourism, but steps are being taken to alleviate what could become a serious bottleneck to further development. Construction of a fourth lane to the Honoapiilani Highway from Wailuku to Kaanapali has begun and is scheduled to be completed by 1989. A bypass highway is also planned for the area, and though a route has yet to be officially chosen, it should be completed by 1995.

"One potential problem is the growing inadequacy of the island infrastructural system."

In the meantime, a temporary moratorium on construction in the West Maui area was proposed to reduce potential overcrowding and focus people's attention on the area's overused roadways. It seems to have served its purpose. While the moratorium will not become law, a system of phasing building permits and hotel openings based on completion of road projects is being used in its place.

The dwindling labor pool is another challenge. With the approach of full employment in the economy, the labor supply is already tight. The area most affected is West Maui, which is isolated from the major population centers in Central Maui. Finding workers will become increasingly difficult. Employee "raiding" is expected to increase as new hotels come on line, especially at the department head and sub-department head levels. Construction contractors are finding it harder to get reliable subcontractors. Plantations are experiencing a shortfall in field hands and journeyman workers, like electricians. Small businesses are having the hardest time of all locating workers.

"With the approach of full employment in the economy, the dwindling labor pool is another challenge."

The labor shortage could exacerbate other problems, such as the shortage of affordable housing, and the potential for wage inflation. A suggested solution is to ferry workers from Molokai to West Maui, but no firm proposals have been made.

Ironically, infrastructural bottlenecks and labor shortages are gaining attention when the visitor industry is already beginning to slow down in 1987. Nevertheless, Maui continues to forge ahead catering to the more affluent upscale visitor. With present hotels charging nearly $200 a night and up, and new projects following this pattern, Maui is testing the upper limits of the visitor market.

Agriculture on Maui is going through changes. Though the Farm Act has established an 18-cent loan rate for sugar, sugar acreage is on the decline because of the bleak prospects for future sugar legislation. The pineapple industry is rejuvenated as prices remain stable and acreage in pineapple increases. Diversified agriculture is expanding as well. Maui's macadamia nut orchards are becoming more productive, and Maui's first cocoa crop is set to be planted this year. Vegetable farmers are having a good year, and the flower industry is enjoying increased demand.

Commercial activity is doing well. The new Lahaina shopping center reports full occupancy since opening in March, with rent ahead of schedule. Maui Mall in Kahului is reporting a 10-percent increase in retail sales over last year. More growth in retail business is expected as demand for commercial property increases with the completion of the new hotels.

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Industrial park space is in demand. Wailuku Agribusiness Wailuku Industrial Park is sold out. A second project, the Millyard, is being developed. A&B's Wakea Business Center is 90 percent occupied. All the warehouse space has been leased. Another industrial subdivision is being planned on a 13-acre triangle near Dairy Road.

Perhaps the newest and most vibrant industry to make an impact on the Maui economy is windsurfing. The coastline from Kanaha Beach to Hookipa is claimed to be the best windsurfing area in the world. It has attracted both surfers and economic activity to Maui. Approximately 52 companies now engage in tours, promotion and marketing, retail and wholesale trade, licensing, manufacturing, export,and research and development activities on Maui. These businesses employ about 500 people and generate $10 million in revenue. Windsurfing has single handedly revived Paia.

Lanai and Molokai are also going through changes. Pineapple remains the major component in the Lanai economy, but the 2,100 residents of this unhurried plantation island are gearing up for the introduction of two luxury hotels, in the next two years, one at Koele and the other at Hulopoe Bay. Facilities are also being added for the residents of Lanai City.

Molokai is becoming the state leader in the production of diversified crops. The economy, however, is not doing well. Del Monte is closing its pineapple operations. Molokai Ranch, the island's largest landowner, suffered losses in the first quarter of this year and is beginning to redirect its investment strategy back to the island.

THE VISITOR INDUSTRY

Tourism had a spectacular year in 1986, and Maui shared in the prosperity. Last year 1,998,800 westbound visitors came to Maui, up 9 percent from 1985. Hotel occupancy averaged 82 percent, the highest ever for Maui.

The industry's fortunes appear to have reversed in 1987, and Maui is, again, sharing in the trend. The Hawaii Visitors Bureau has forecasted zero to negative growth statewide for 1987. Maui's experience, so far, has confirmed that forecast. Through the first five months of 1987, the westbound visitor count was off 8 percent from last year. Hotel occupancy decreased to 80 percent, down 10 percent from the previous year.

"The Hawaii Visitors Bureau has forecasted zero to negative growth statewide for 1987. Maui's experience, so far, has confirmed that forecast."

This decline has been felt by Maui's two upscale resort areas. The Kapalua Bay Hotel experienced a good first quarter but expects a weak second quarter. In the Kaanapali resort area occupancy through April was down 5 percent. In the Wailea area the Inter-Continental Hotel had a good first quarter, but the second quarter looks weak, and business is expected to be off about 20 percent in the summer. At the Stouffer Wailea Beach Resort, the first quarter occupancy rate was low, and expectations are for continuing weakness during the summer season.

The condominium market is also experiencing a slowdown. First-quarter occupancy was up slightly from last year, but second-quarter occupancy has fallen below the 1986 level; overall, it is about 5 to 8 percent down. Competition from Australia has been cited as a major reason for the lower occupancy. Rates have been increased, ranging from $65 to $165 a day depending on the season.

Competition between condominiums and hotels remains intense, though their markets are slightly different. Most condo users are repeat visitors or those who have stayed in condos before. Still, condos are drawing those visitors, on the margin, away from hotels.

This reduced demand can be attributed to several factors. Competition from abroad has increased this year. Europe is relatively safe from terrorism again, Mexico is very attractive this year, the Caribbean is another popular destination, and Australia's appeal has increased after an aggressive advertising campaign. Competition from other neighbor islands is also drawing visitors away from Maui.

"Competition from abroad has increased this year. Europe is relatively safe from terrorism again, Mexico is very attractive this year, the Caribbean is another popular destination, and Australia's appeal has increased after an aggressive advertising campaign."

Increased room rates could be a negative factor. Maui has the highest average daily room rate in the state, particularly in the Kaanapali and Kapalua areas. In May 1987, Maui's average was $122, up 10 percent from 1986. West Maui's average was $136, up 12 percent from last May. Part of the increase can be blamed on the new transient accomodations tax, although more of the increase may be a reaction to the incredible tourist season last year.

Hotel developers continue to have confidence in Maui as a vacation destination despite the slackening in visitor arrivals. Several new projects and renovations are scheduled for the next couple of years. In West Maui, the Kapalua Bay Hotel is starting a $10-million renovation. Plans to build another hotel in the Kapalua area have been drawn up by Maui Land and Pine. Construction of this 450-room upscale hotel should begin by early 1988.

"Hotel developers continue to have confidence in Maui as a vacation destination despite the slackening in visitor arrivals."

The Kaanapali area is expanding. The North Beach project is now in the Shoreline Management Authority (SMA) phase. It is set to add around 400 rooms to Kaanapali by 1991. Plans for a Hawaiian Cultural Center are being prepared as well, and potential investors are being sought.

Wailea is getting ready for expansion in the near future. All the ocean parcels in this Alexander & Baldwin resort area have been committed. Planned projects include a 350-room Four Seasons Hotel on 15 acres, an 800-room Hyatt hotel on 40 acres, a 400-room Embassy Suites Hotel on 21 acres, and a Grand Champions Hotel and Villas on 21 acres. All these projects are expected to be completed between 1989 and 1991. More upscale residential units are also being built, roads are being expanded, and the shopping village will be doubled in size.

Air transportation facilities were expanded with the opening of the Mahinahina Airport in West Maui. Owned, operated, and used by Hawaiian Airlines for its own flights, it is also used by Air Molokai, Big Island Air, Hemmeter Aviation, Panorama Air, and Princeville Air. The February 28th opening marked the end of a seven-year campaign to build this $8.5-million airport on a 50-acre parcel. The airport offers an alternative access to the Kaanapali and Kapalua areas without going through the heavily traveled Lahaina-Kaanapali corridor when coming from Kahalui Airport.

Kahului Airport is going through facility expansion as well. The five-year facelift, begun earlier this year, calls for the construction of a large linear terminal designed for jumbo aircraft, a new control tower, a separate commuter terminal (already completed), and an extension to the main runway and/or a new parallel runway. The facility will then be better equipped to handle the rush of visitors using the airport. There were 4.3 million in 1985, and 8.4 million are expected in the year 2000.

About 550,000 of those visitors coming into Kahului Airport in 1985 went to Maui's premier tourist attraction, the Maui Tropical Plantation. By offering the two favorite tourist activities, sightseeing and shopping, the plantation has managed to achieve 21 to 24 percent penetration into the Maui visitor market since opening in August 1984. Preparations to double its size by adding another 60 acres to the plantation are underway. A processing exhibit may be added to the park, an evening show has been added, and the park is now able to handle large group tours. Activity at the plantation followed the pattern experienced by the hotels and condominiums, with a good first quarter followed by a weaker second quarter. This has not discouraged management, which believes the plantation has not yet reached its full potential for promoting tropical agriculture through tourism, and vice versa.

Maui Land and Pine is interested in developing another attraction for the more business-minded. The Kapalua Pacific Center is an idea for a convention-seminar center where informal transfers of information, techniques, and training would be conducted. It would concentrate on two programs: (1) management training for rising executives of different countries, and (2) high visibility conferences to promote interaction between Pacific Basin countries.

SUGAR

In 1986, 302,839 tons of sugar were produced by Maui's three sugar growing companies, up 5 percent from 1985. One of the most important factors affecting current sugar yields is the conversion to drip irrigation. This process of applying water directly to the plant's root area through an underground pipe system is a more efficient way of irrigating sugar cane fields than the old furrow method and takes less labor to irrigate the fields. It is also a more effective way of delivering fertilizer to the sugar cane. HC&S and Pioneer Mill have been able to raise their productivity without increasing water usage. In 1987, HC&S expects to produce over 14 tons per acre, while Pioneer should be up to around 13.5 tons per acre.

"One of the most important factors affecting current sugar yields is... drip agriculture."

The installation of drip irrigation has not stopped the erosion of the sugar industry. Of the three sugar companies only Alexander & Baldwin's HC&S Co. is maintaining its plantation size of approximately 36,000 acres, and is expecting an increase in tons of sugar produced. With good weather, production should increase about 2 percent to 233,000 tons this year. Wailuku Agribusiness is continuing its conversion out of sugar into pineapple. The phase-out should be completed by the end of next year, thus eliminating an operation that produced 19,885 tons of sugar in 1986. Pioneer Mill is facing a similar though not as drastic change. A "shrinkage scenario" is anticipated for the near future. Acreage will be reduced by 500 acres in 1987, and total tons of sugar produced will decline by 3 percent to just around 52,000 tons.

Employment figures also show a decline in the sugar workforce. Both HC&S and Pioneer Mill reduced their 1986 workforce, and employment forecasts show continued reductions in 1987.

The growing opposition to open-field burning of sugar cane is a major threat to the industry. Burning cane is currently the most cost effective way of harvesting and clearing sugar cane fields. It reduces the amount of labor involved, the amount of equipment needed in harvesting and milling, and improves the quality of cane juice recovered. According to a study done in 1983 by HC&S Co., discontinuing burning would result in an increase of $800,000 in annual operating costs.

PINEAPPLE

Maui Land and Pine earned a profit of $8.3 million in 1986. While that represented a drop of 22 percent compared to 1985, it was still above profits in 1981 and 1982. The decline is blamed on the 1984 drought, which reduced both the quality and the quantity of last year's crop. This, along with increased exports of canned pineapple by Thailand, resulted in a decline in retail fruit sales. Other sectors of the pineapple market, though, did show gains. Sales in the food-service area, canned single-strength pineapple juice sales, and total cases of fruit sold, all increased.

"More production is on the way, as both acreage planted in pineapple and facilities to handle the fruit are expanding."

More production is on the way, as both acreage planted in pineapple and facilities to handle the fruit are expanding. Wailuku Agribusiness is now in the process of converting its sugar land to pineapple under a long-term contract with Maui Land and Pine. Approximately 500 acres a year will be converted until 1990. The first crop was planted in 1986 on 78 acres and will be harvested in 1988 or 1989. Land leased to Pioneer Mill will be returned and put into pineapple soon. In December of 1986, a new handling system was installed to reduce damage to both crowns and fruit. This should improve both pineapple yield and fruit quality.

Although production is expected to increase in 1987, profits are expected not to exceed 1986, due primarily to competition from abroad, especially Thailand.

DIVERSIFIED AGRICULTURE

As of 1985, Maui county's value of diversified agricultural crops accounted for about 15 percent of the state total. Vegetable and melon sales increased by 7 percent to $9.7 million, fruits (excluding pineapple) declined by 26 percent to $255,000, field crops declined by 10 percent, and flower and nursery products increased by 16 percent to $5.3 million. Cattle sales totalled $68 million, while hog sales came to $1.9 million; both were down slightly from 1984.

"Maui's diversified agricultural industry is going through an unstable period."

Maui's diversified agricultural industry is going through an unstable period. While official numbers are not available, overall, it appears 1986 was a good year. Most vegetable growers, with cabbage being the exception, had good crops and reasonable prices. Due to a recent price

fixing scandal involving the Wholesale Produce Dealers Association of Hawaii, cabbage farmers have not been monitoring output levels for fear of legal action. That has caused the price of cabbage to be cut in half, and most cabbage farmers are losing money.

Another troubling occurrence has been the closure of one of Maui's two agriculture cooperatives. The Maui Vegetable Growers Association was forced to close down in 1986 for financial reasons, leaving most of its members to fend for themselves. Maui's other co-op, the Maui Farmers Exchange, is doing well.

Protea and other flower products continue to experience steady growth. Gross sales were up for the Hawaii Protea Cooperative in fiscal 1986. An embargo on South African protea, coupled with a 30-percent decrease in production due to a hot summer, caused demand to outpace supply. As a result, the number of farms in the co-op have increased to 15, and farm acreage has increased by about 20 acres. A bumper crop is expected for the winter of 1987, and plans have been made to expand shipping capacity by building a loading dock and better box-storage facilities.

There is still a great deal of untapped demand in the local flower industry. Consumers abroad have been willing to pay higher prices for protea products in every market except Southern California. Locally, the demand for other flower products, like carnation heads, is outdistancing supply. Imported flowers must be brought in from California, and even Israel. Local flower growers could eventually expand production to the point where Hawaii is self-sufficient. Before any of this can happen, however, the flower industry must also endure a period of "growing pains." Transportation services are going through a period of flux. Rates are changing, old carriers are merging, and new ones are entering the market. The processes of distributing cuttings and pesticide registration are still being refined. However, according to industry sources,these problems will eventually be resolved.

Several other crops are in various stages of development. Wailuku Agribusiness has 1,300 acres in macadamia nut trees on its plantation. They are still maturing to their peak production age, but close to one million pounds of nuts will be harvested this year, and 2 million pounds are expected in 1988. Fresh nuts will be sent to Hilo for processing. The relatively small size of harvest currently prevents the construction of such a plant on Maui. In three or four years, production may be high enough to justify Maui's own processing facility. Herb farming on a small scale has been developing on Maui. One plot in the state's Kula Agricultural Park is devoted to herbs, and additional plots are popping up on other farms. There has been little trouble marketing the small supply (Basil is especially popular), and the shipping problems that hinder perishable produce have not been encountered.

Cocoa may be a crop that will further diversify Maui's agriculture in the future. Groundbreaking ceremonies were held in early June for a 305-acre pilot project in Puukolii. The Hawaii Cocoa Plantation is a joint venture of Kekela Enterprises Inc., of Hershey Foods, and Amfac Agribusiness Inc. It is the second experimental cocoa field in the islands. About 450,000 trees are set to be planted on the site. They will help determine yield and quality of cocoa beans grown in Lahaina, as well as which varieties perform best in Hawaiian soil.

CONSTRUCTION

Construction-put-in-place figures reveal 1986 was a very good year for Maui County. The total for the year came to $93 million, up 26 percent from the previous year. Construction for the first four months of 1987 shows this growth trend is continuing. Construction worth $32 million has been put in place so far, 8 percent more than the same period last year. Private permits authorized, an indicator of future construction, also showed a 51-percent increase as of April, 1987. Residential permits increased by 70 percent, while nonresidential permits increased by 28 percent.

"Construction-put-in-place figures reveal that 1986 was a very good year for Maui County."

The increase in construction this year involves primarily hotel and condominium projects like the 413-room Embassy Suites Hotel being built beyond Kaanapali near Kapalua and the renovation of the Westin Maui. This trend will continue as construction begins on Maui Land and Pineapple's new 450-room hotel in the Kapalua area in early 1988. The Kaanapali North Beach project is scheduled for construction in the next year, while construction on the Four Seasons Hotel in Wailea will begin at the end of 1987. The Embassy Suites Hotel project in Wailea will begin next year, and the Grand Champions Villas condominium construction will begin within a year.

Public construction is also beginning to pick up. The county is mostly involved in repair and maintenance work, the biggest project being the Kahoma Stream flood control project. The state and federal government will be making renovations to the Kahului Airport for the next five years, and work on the bypass highway will begin once the route is chosen.

Construction material suppliers expect this construction surge to continue until around 1990. At that time commercial construction is expected to taper off to be replaced by residential construction of both low-income and upscale units.

While most of the big contractors are enjoying prosperity, the construction boom seems to be by-passing most of the smaller contractors. Unable to bid for larger projects, small contractors (those specializing in projects worth $3 million or less) are having a tough year. They are locked out of the big projects, and unionized contractors also face stiff competition from non-unionized shops. For a typical house, of roughly $175,000, there is a minimum difference of $10,000 between union and non-union contractors.

Labor shortages are beginning to take their toll as qual-

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ified trade workers and management personnel are becoming scarce. Other labor problems are likely as 15 contracts covering different unions are set to expire after August 31. There is a good possibility one or two strikes could occur later this year that would affect even the big construction projects.

Affordable housing construction has not seen the brisk activity that has characterized the hotel industry. The supply of housing has definitely fallen behind demand in recent years, with increasing reports of families living in vans or in tents in the sugar cane fields. The shortage is most acute in the West Maui area. The county, either separately, or with the Hawaii Housing Authority (HHA), is trying to address the problem. Last year, one housing subdivision, consisting of 70 two- and three-bedroom units, was completed in West Maui. Another project in Lahaina is before the City Council for approval. The HHA, with county assistance, has plans to develop the land formerly owned by Pioneer Mill makai of the new bypass highway in Lahaina. The first phase will involve 70 to 100 acres of land on which at least 300 units will be constructed. Up to 200 acres may become available for future development, depending on the alignment of the highway. The Kahoma stream realignment could also open up land for development. If Amfac donates the land, 79 units could be developed on 6,000 square-foot lots. An area near the Lahaina Civic Center is also being considered for 185 units.

Private developers also have several projects in mind for West Maui. Maui Land and Pine is considering a 38-unit, 8-acre project for their hotel and plantation workers in Napili, and the county has expressed an interest in developing an adjacent eight acres. A 28 one-bedroom, 28 two-bedroom apartment project with federally subsidized rents called Honokowai Villa, beyond Kapalua, is now being planned by a private contractor in conjunction with HHA. Another developer has suggested a 72-studio, 216 one-bedroom apartment project in Honokowai. Monthly rent would run from $550 for a studio to $700 for a one-bedroom unit. This project would cater more to the transient worker market in West Maui.

Kihei may become another problem area, and one project has been started in response to the growing housing demand. The Ohukai subdivision, consisting of 107 lots on 24 acres donated by Haleakala Ranch, recently had its groundbreaking. Another project by Baldwin Pacific Corp. has filed for zoning to start development of Piilani, a 188-acre project consisting of 455 single-family units selling for about $125,000, and 330 multifamily units priced at $75,000 to $80,000.

The shortage of affordable rental apartments will continue to grow. This is the biggest housing problem facing the island with no relief in sight. The county isn't doing much because the money invested in rental projects is usually unrecoverable. Debt retirement would push the necessary rental rates beyond the affordable range. At the same time, federal aid for such projects has dried up, and tax reform has lessened private incentives to build.

HIGH TECHNOLOGY INDUSTRIES

Activity at Haleakala's Astronomy facilities has been relatively stable since last year. Avco is in the second year of its five-year contract with the Air Force to operate and maintain its facility on Haleakala. It is generating about $7.5 million a year for the Maui economy and employs about 132 people, 91 of whom were hired on Maui.

The University of Hawaii Institute of Astronomy facility is having a quiet year. Ongoing projects are adding about $1.5 million a year to the Maui economy with 16 to 20 people employed by the Institute, the same as in 1986.

This stable situation will not last long. In the next five years, activities will be on the rise at both facilities. An Air Force experiment, through Ball Aerospace Co., will bring in $3 million from mid-1987 to mid-1989. Employment will increase at the junior-grade level, and some construction will be done. Avco will also be involved in the construction of a new telescope atop Haleakala, which is scheduled to begin in 1989, to be completed by 1992. Four million dollars have been allocated to the project, and it will be the largest telescope on Haleakala. Employment is also expected to rise. In the next three to four years, 20 to 24 junior- and senior-level positions will become available.

A major project coming up at the U.H. facility is a solar physics experiment to be done in conjunction with the Japanese Space Agency. A satellite will be launched by the Japanese, and the U.H. will operate the ground-based solar observatory measuring the type, amount, and rate of energy and material being produced by the sun. The project could infuse $6 million into the Maui economy.

The University of Hawaii Nitrogen Fixation by Tropical Agricultural Legumes (NIFTAL) project is also doing well. This project, which develops and tests different varieties of beneficial soil bacteria for Third World countries, is in its second ten-year $10 million cooperative agreement with the federal government with a possibility to double that income through add-on projects. Funding will come to $1.2 million for 1987 alone. Projects are now being conducted in India and Zambia.

The Maui Research and Technology Park is not doing as well as the other high technology ventures. Everything came to a halt in November of 1986, when the master developer pulled out of the project because of mainland financial problems. The search for a new master developer goes on, and a new one should be named soon.

"The Maui Research and Technology Park... came to a halt... when the master developer pulled out ...because of mainland financial problems."

Maui Mayor Hannibal Tavares and the Maui Economic Development Board remain confident that the so-called "fourth pillar" of the Maui economy is still viable, and once the new master developer is found, progress on the park will resume. The master plan, design guidelines, and everything else up to the preliminary subdivision have been completed. Interest in the park is strong with ten

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potential lot buyers from Oahu, the U.S., and New Zealand. Avco may be the first tenant to move into the park, which could be by year-end. The county has given permission for accelerated development within the park, and the state administration is supportive of the park. Haleakala Ranch is also willing to donate 30 acres of land adjacent to the R & T Park for a possible U.H. development.

However, the failure of anyone to commit themselves to moving into the park is disturbing to skeptics. The primary candidate, Avco does need new facilities. They are now housed in trailers and the old Maui Hospital building. Avco would already be in the park if the original developer had not withdrawn. Now Avco is in the second year of a five-year contract with the Air Force, and the feasibility of moving into the park must be reevaluated. It may be necessary to widen the scope of the park to include other types of businesses in order for it to work.

Maui Electric Company (MECO) had a busy year in 1986. The humid weather, more tourism, and lower rates increased usage by an unexpected 8 percent to 583 gigawatt-hours. Residential service installation reached a record level for the year, but it was the commercial sector that really put a strain on the system as both customers and use per customer increased. Forecasts expect demand to be around 596 gigawatt-hours for 1987. This increase in usage prompted MECO to hurriedly install two 2.8 megawatt generators to help handle the load. A bigger 13.8 megawatt generator is scheduled to come on line in March 1988.

Right now, alternate energy sources account for about 20 percent of total electricity generated. HC&S supplies about 19 percent of that through its bagasse-powered generator. They have a firm power commitment to supply 12 megawatts to MECO. Geothermal energy is thought to have potential. Rules and regulations for the permitting process have been drafted and sent out for comment. The southwest rift zone of Haleakala has been designated Maui's geothermal subzone by the Department of Land and Natural Resources.

Meanwhile, Zond System's wind farm project above Kapalua had to delay development because the European company supplying their wind generators went bankrupt. The delay has disrupted Zond's schedule, which called for a two-phased development with phase one generating 4.2 megawatts and phase two generating 5.8 megawatts.

Hydro-power is not enjoying much success either. The proposed hydroelectric plant at Keanae came out too expensive for the county. A private contractor was interested, but its environmental impact statement was rejected. Now another private contractor, Carrington Energy, is pursuing the project. No progress has been made for some time, and it faces heavy opposition from environmentalists.

INFRASTRUCTURE

With the local population growing and the visitor count rising, the strain on the island infrastructure is apparent. Honoapiilani Highway does not have enough lanes, and there are no alternative routes. However, these deficiencies are being addressed by adding a fourth lane to the highway, to be completed by December 1989, and constructing a new bypass route, to be completed by early 1996. Until then, the pace of development in West Maui will be controlled through the county permitting process.

These new additions to the road system will go a long way to alleviate heavy traffic in the West Maui area. They are at best only temporary solutions, however, as the continual increase in cars will necessitate further additions to the system in the future. The county is trying to break this vicious cycle by putting together a model traffic management program. The program's objective is to reduce the number of cars on the road. About 70 percent of Maui tourists drive their own cars to West Maui. The program would encourage West Maui hotels to put together a shuttle service from Kahului Airport to West Maui. Car rental services would then be available at the hotels. This would ease congestion, and enhance the quality of the visitor experience on Maui.

Steps are also being taken to preserve the unique qualities of rural Maui from the rush of progress. A country and town district zoning ordinance will be applied to those areas deemed special to Maui county. Hana, Waikapu, Paia, Makawao, Keokea, Waiakoa, Waihee, Maunaloa, Kaunakakai, and Lanai City are sites where this zoning ordinance will be used. The idea is to preserve areas that convey the uniqueness of Maui.

"Maui's ocean resources are, perhaps, the most abused and unprotected of them all."

Maui's ocean resources are, perhaps, the most abused and unprotected of them all. The county claims there is already too much water activity going on. This goes for the whole spectrum of activities from jet skies, to boat moorings, to Molokini visits. At present there are no real controls over the use of these resources. The mayor will soon be asking for a task force to investigate the management of Maui's offshore resources.

Maui's fresh water system appears to be adequate. For example, present West Maui demand is 4 million gallons per day, while capacity is 7 million gallons. Central Maui demands 12 million gallons per day from a system that can sustain 20 million gallons per day. However, exploration and development of new water sources is continuing. New aquifers will be studied in Central Maui soon, a new well is being dug in West Maui that will increase capacity by one million gallons per day, and future sources like the East Maui mountains and desalting plants have been identified. An approximately 100-million gallon reservoir for Kula is also being investigated. The county is making sure development occurs in an orderly manner, when the need arises, so as to avoid overcapacity in the system. However, while Maui has an adequate water supply, according to the county Department of Water, the transportation of that water will require further attention.

The quality of water is also important to the county. While traces of the weed killer atrazine have shown up in irrigation water sources, Maui hasn't had any drinking water quality problems since 1981. Nonetheless, more treatment plants are being built to conform to the EPA's Safe Drinking Water Act. The criteria for drinking water purity should be met by 1990.

MOLOKAI

The recent announcement that Del Monte Corp. will terminate pineapple cultivation on Molokai next year was a blow to the island's economy. But, Molokai is experiencing encouraging developments that should more than make up for the loss of pineapple.

"...Molokai is experiencing encouraging developments that should more than make up for the loss of pineapple."

Among the new developments are: (1) Coffees of Hawaii (Molokai) Inc., a wholly owned subsidiary of Hawaii Guarani Plantations, Inc., has started to grow coffee on

Molokai on the largest scale ever attempted in the state; (2) Molokai Ranch Co. has decided to liquidate its mainland properties, and concentrate on developing its large land holdings on Molokai; (3) diversified agriculture continues to expand on the island; (4) the potential for tourism looks brighter; and (5) Molokai Electric Co. has made a successful comeback from near disaster.

Coffee could become a major crop in the state, beginning on Molokai. Coffees of Hawaii has started to grow seedlings at a Molokai nursery, and will plant 800 acres of coffee on land leased from Molokai Ranch above the town of Kualapuu. Transplanting is scheduled to begin in September and continue to March 1988. If the project is successful Hawaii Guarani plans to expand plantings to total 3,000 acres of ranch land.

Superior Coffee and Foods/Hawaii has agreed to take the Molokai crop if it is of acceptable grade. Superior is confident of the quality and sees no problem in selling it on the world market.

Coffee yields ranging from 3,000 to 4,500 pounds per acre of green coffee are being projected for Molokai, compared to a little over 1,000 pounds per acre of green coffee for the Kona crop last year. Reasons for the projected high Molokai yields are the rich soil of Molokai, more intensive planting, harvesting of only ripe coffee cherries on Molokai, and a more efficient method of pulping.

A mechanical harvester developed in Brazil and Australia may be used on Molokai that not only picks ripe cherries, but pulps them and prunes the trees in one operation. From 1,300 to 1,600 trees will be planted per acre on the Molokai plantation, substantially more than the 900 trees on the average Kona acre. The workforce will total 16, or two workers per 100 acres.

Molokai Ranch Co. will not decide for another year whether it will get back into the cattle raising business. Its herd was irradicated last year in a state program to rid the island of bovine tuberculosis. For the present, it will fatten calves on contract from other ranchers in its pastures before sending them to the feed lot.

The Molokai Ranch is in the process of liquidating its mainland property investments. It will concentrate on developing its Molokai lands to their best use. Real estate already is the ranch's largest revenue source.

Diversified agriculture continues to do well on Molokai. To aid marketing, a $525,000 forced-air cooling plant will be built near the airport, funded by federal and state grants. This will help farmers keep their produce fresh and extend its shelf life. The plant will have close to 4,000 square feet of floor space.

The second phase of the Molokai Agricultural Park has been completed, and applications are being processed. There are nine lots ranging in size from 28 to 124 acres, with a total 431 acres.

Another new development is the establishment of a research station by the University Extension Service near the airport. The objective is two-fold: help farmers solve problems, and develop alternative crops.

"Molokai will experience a stronger, more diversified economy taking shape over the next decade."

PDI-Molokai, a California limited partnership, is seeking financing to build the 375-room Kaiaka Rock Hotel. It already has a building permit. Pankow Holdings is the general partner. The property is south of the Kaluakoi Hotel and Golf Club, formerly the Sheraton Molokai Hotel.

Tourism is increasing on Molokai. The key year could be 1989—the centennial of Father Damien's death. If he is canonized by then, Molokai may be discovered by thousands of visitors.

Molokai Electric Co., which suffered a major breakdown of its brand new generating plant in 1982 and went into bankruptcy, has nearly completed its financial reorganization. It reported a second consecutive year of increased cash flow as well as retained earnings in 1986. Payments to creditors are on schedule, and the firm's survival as an investor-owned public utility appears favorable. Demand has been up the past three years. The company is projecting an annual increase of 2.5 percent for the next five years, which does not take into account the new coffee plantation or the possibility of a new hotel being built in West Molokai.

The company is getting ready to restart its steam plant, which has been repaired, pending approval by the Public Utilities Commission. Wood chips will power this generating plant, but it can burn fuel oil if necessary. A Portland, Oregon utilities firm will operate the steam plant, and sell the power to Molokai Electric Co. This could stabilize the cost of electricity, eliminating some of the effects of changing oil prices.

With these several new developments, Molokai will experience a stronger, more diversified economy taking shape over the next decade.

LANAI

The economy of the island of Lanai, long dependent on the cultivation of pineapple alone, is undergoing a sudden change: the projected growth of tourism. Owned almost entirely by Castle & Cooke, Lanai has been the major grower of pineapple for its Dole cannery in Honolulu for many years. However, Castle & Cooke is rapidly developing two luxury resorts scheduled to open before the end of this decade. Plans for a 102-room hotel at Koele, above Lanai City have been approved by the Maui Planning Commission. Construction was scheduled to begin before the end of the summer.

"The economy of... Lanai, long dependent on... pineapple, is undergoing a sudden change: the projected growth of tourism."

The development of the second hotel, the 250-room Manele Bay resort on the south shore of the island, is also moving along briskly. The permit process may be completed in a few months, and construction could begin before the end of the year. Both hotels are scheduled to be completed in 1989, the Koele early in that year, and Manele Bay toward the end of the year.

The company is improving its nine-hole golf course mauka of Lanai City and will add a second nine to make a plush course for the upscale visitors expected in a few years. It is also building a $2-million recreation center in Lanai City for employees, that will include a meeting room, a 25-meter swimming pool, tennis courts, a track and multi-purpose football, and soccer field. Landscaping, now underway in and around Lanai City, will greatly improve the appearance of this upland resort.

Labor requirements for the two resorts are estimated to be more than 500 full-time employees, compared with current employment of close to 600 in pineapple. The lack of trained workers may pose a problem in the beginning. The company does project an increase in the population of Lanai from the current 2,100 to 4,200 by the year 2000.

Additional employee housing is being planned.

The pineapple workforce has been stabilized with the introduction of year-round harvesting compared with the previously concentrated summer peak. This is the first summer that the company has not had to bring in hundreds of students to help harvest the crop. Instead, construction workers will be using the cottages that student workers occupied in past summers.

Dole has 13,000 acres planted in pineapple. The recently completed drip irrigation system is using scarce water much more efficiently. The result has been a dramatic increase in productivity. Other cultural practices have also contributed to the increase in yield. The outlook for pineapple on Lanai is good.

About 3.5 million gallons of water a day are used on Lanai for agricultural and domestic purposes. The island's second and third wells are being developed to bring the usable capacity up to 7.5 million gallons a day in order to supply the hotels. Hydrologists have found that Lanai has a daily sustainable yield of 10 million gallons of water.

CONCLUSION

The Maui county economy had a good year in 1986. The visitor industry, experiencing a year unequalled in recent times, propelled the economy to prosperity. Gross business receipts increased by nearly 9 percent, unemployment shrank by 9 percent, and construction-put-in-place increased by 26 percent.

Those same indicators seem to be pointing to another year of positive growth in 1987, although tourism will not play as big a role as in 1986. The construction industry, in general, is facing a vigorous market until the end of the decade. Industrial and commercial activity are on the rise. New enterprises in windsurfing and high technology are injecting much needed diversity into the county economy.

In the future, Maui's challenge will be to maintain economic growth in the face of several shortcomings. An inadequate highway system and possible labor shortage could easily force the Maui economy into stagnation. As for 1987, with the other sectors of the economy picking up the slack left by the visitor industry, Maui's economy will continue its upward trend.

Maui County Statistics

	Unit	Period	1982	1983	1984	1985	1986	Jan.-May 1987	% change Jan.-May 1986/1987	% change Annual 1986/1985
Population, Resident	number	July 1	76,898	79,869	83,519	85,303	87,300	n.a.	n.a.	2.3
Civilian Labor Force	number	mo. avg.	42,900	44,850	44,950	46,850	48,300	49,500	4.3	3.1
Employment*	number	mo. avg.	39,550	41,450	42,250	44,050	45,750	47,300	5.8	3.9
Unemployment	number	mo. avg.	3,300	3,400	2,700	2,800	2,550	2,250	-18.2	8.9
Unemployment Rate	percent	mo. avg.	7.7	7.6	6.0	5.9	5.3	4.5	-22.4	10.2
Total Job Count	number	mo. avg.	36,600	37,850	38,950	41,100	42,400	43,650	5.3	3.2
Gross Business Receipts	mil. $	total	1,203.4	1,376.2	1,613.7	1,694.7	1,842.6	833	7.3	8.7
State Tax Collections	thous. $	total	52,850	68,217	76,573	82,941	101,409	46,754	17.2	22.3
Visitor Expenditures	mil. $	total	540.3	792.9	1,078.3	1,105.7	1,195.5	n.a.	n.a.	8.1
Estimated Westbound Visitors	thous.	total	1,550.1	1,645.7	1,854.7	1,831.0	1,998.8	787.0	7.5	9.2
Hotel Inventory	number	Feb.	12,162	12,749	13,138	14,152	14,096	13,849	-1.8	-0.4
Hotel Occupancy	percent	mo. avg.	73.9	75.2	80.5	78.5	81.5	79.7	-9.7	3.8
Construction Put-In-Place	thous. $	total	69,497	66,952	68,593	73,527	92,586	44,136	23.6	25.9
Private Permits	thous. $	total	90,702	91,249	59,841	178,633	153,047	n.a.	n.a.	14.3
Residence Permits	thous. $	total	35,771	38,814	40,887	145,915	104,749	n.a.	n.a.	28.2
Non-Residential Permits	thous. $	total	54,931	52,435	18,954	32,718	48,298	n.a.	n.a.	47.6
Public Contracts Awarded	thous. $	total	45,790	23,942	26,759	37,766	58,738	10,102	58.8	55.5
Real Estate Research										
Single-Family	number	total	103	185	201	259	386	198	41.4	49.0
Average Price	dollars	cum. avg.	134,861	155,095	175,494	151,865	174,763	185,667	14.5	15.1
Condominium	number	total	282	381	386	424	669	368	47.2	57.8
Average Price	dollars	cum. avg.	153,414	151,169	141,763	123,471	142,717	139,504	-6.7	15.6
Sugar Production (as Sugar)	thous. tons	total	235	287	300	290	303	77	-15.4	4.5
Pineapple Sales, Fresh Equivalent	thous. $	total	38,602	45,099	42,176	36,380	n.a.	n.a.	n.a.	n.a.
Diversified Crops and Livestock	thous. $	total	25,172	29,728	30,643	31,524	n.a.	n.a.	n.a.	n.a.
Diversified Crops*	thous. $	total	13,814	17,335	18,122	19,309	n.a.	n.a.	n.a.	n.a.
Livestock	thous. $	total	11,358	12,393	12,521	12,215	n.a.	n.a.	n.a.	n.a.

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